EXECUTIVE SUMMARY FOR
PROPOSED ROUGH STONE AND GRAVEL QUARRY
CATEGORY – B1

(Public Hearing Upgraded after Terms of Reference (ToR) as per the provisions of EIA Notification 2006 & amendments thereof)

ToR Lr.No. SEIAA-TN/F.No.10551/SEAC/1(a)ToR-1667/2023, dated 08.02.2024

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C and 367/4.
VILLAGE	NAMBARAI
TALUK	ARCOT
DISTRICT	RANIPET
EXTENT	4.04.5 HA
PROPOSED PRODUCTION	ROUGH STONE - 3,71,250 M3 (1-5 Years) ROUGH STONE - 1,37,575 M3 (6-5 Years) GRAVEL - 50,304 M3
LAND	PATTA LAND

(Sector No. 1(a) Sector No.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 18.03.55 Ha
Baseline Monitoring Period – February 2024 to April 2024

APPLICANT

M/s.Dhana Blue Metals,
(Proprietor: Thiru.S. Dhanakotti) No.6, GST Road,
Pallavaram Taluk,
Chengalpattu District.

ORGANIZATION

M/s. GLOBAL MINING SOLUTIONS
(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)
PLOT NO.6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATTY, KOTTAMETTUPATTY, OMALUR, SALEM, TAMIL NADU – 636 455
NABET ACCREDITATION NO – NABET/EIA/2326/IA 0110
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July - 2024

EXECUTIVE SUMMARY

1.1 INTRODUCTION

M/s. Dhana Blue Metal, Prop: Thiru.S. Dhanakotti has obtained Precise Area Communication Letter from Assistant Director, Department of Geology and Mining, Ranipet vide Rc.No.149/2023(Mines) dated 29.09.2023 to quarry out 3,71,250 m3 (1-5 years) of Rough Stone & 1,37,575 m^3 (6-10 years) and 50,304 m^3 of gravel from an extent of 4.04.50 Ha located in S.F. Nos. 361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C and 367/4 at Nambarai Village, Arcot Taluk, Ranipet District, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough Stone & Gravel Quarry of M/s. Dhana Blue Metal, Prop: Thiru.S. Dhanakotti" mines cluster falls under Schedule 1(a) of EIA Notification and its subsequent amendments the project comes under Category B1. The ToR for preparation of EIA/EMP report of the project was approved vide letter no. SEIAA-TN/F.No.10551/SEAC/1(a)ToR-1667/2023, dated 08.02.2024. This report has been prepared in line with the approved TOR for production of maximum excavation of 3, 71,250 m^3 (1-5 years) of Rough Stone & 1,37,575 m^3 (6-10 years) and 50,304 m3 of gravel.

S.No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone & Gravel quarry
4.	Type of Lease	Proposed quarry
5.	Extent of the lease	4.04.50 Ha
6.	Proposed depth of Mining	27 m (BGL) - (1-5 Years) 47m (BGL) – (6-10 Years)
7.	Method of mining	Opencast Semi-mechanized
8.	Proposed lease period	10 Years
9.	Proposed Environmental Clearance	5 Years
10.	Proposed production quantity for five years	Rough Stone: 3, 71,250 m3 (1-5 years) Rough Stone: 1,37,575 m3 (6-10 years) Gravel: 50,304 m3

The Lessee M/s. Dhana Blue Metal, Prop: Thiru.S. Dhanakotti" is an individual with sound experience in the identification, quarrying and marketing of Rough Stone. The proposed land is an owned Patta land .

1.2 LOCATION

This project site is located Nambarai Village, Arcot Taluk, Ranipet District, Tamil Nadu State with 12°49'11.77"N to 12°49'19.36"N and Longitude 79°16'15.96"E to 79°16'25.31"E with Survey of India Topo Sheet No. 57 P/05. To conduct the study, the proposed mine lease area (core zone) and an impact zone of 10 km radius (called buffer zone) around the proposed mine site were considered. The EIA report is based on three months baseline data (i.e. Feb 2024 to April 2024)

1.3 GEOLOGY

The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high-grade metamorphic rock. The strike of the Charnockite formation is $N10^0E$ – $S10^0W$ with vertical dipping.

1.4 PROJECT DESCRIPTION

This is a proposed Rough Stone and Gravel quarry by Opencast Semi-mechanized mining method with drilling and blasting. The quarrying is restricted up to a depth of 47m below ground level (6-10 years). The geological reserves are estimated to be 18,04,050 m^3 of Rough Stone and Gravel 80180 m^3. The mineable reserve calculated by deducting safety distance and bench loss. The mineable reserves is 5,08,825 m^3 of Rough Stone and Gravel 50,304m^3 which will be recovered at the rate of 100% recovery upto a depth of 27 m (BGL) - (1-5 Years) and 47m (BGL) – (6-10 Years) for the period of ten years. It is proposed to quarry out rough stone with 5m bench height, 5m width with 45° slope using conventional Open cast Semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough Stone.

- There is no overburden anticipated during entire rough stone quarrying operation.

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	Proposed quarry
3	Category	B1
4	Nature of mineral	Minor Mineral
5	Production	Rough Stone: 3, 71,250 m3 (1-5 years) Rough Stone: 1,37,575 m3 (6-10 years) Gravel: 50,304 m3
6	Life	10 years
7	Waste generation and management	There is no overburden anticipated during the quarrying operation. Hence, no waste generation.
8	Bench height and width	Height and Width – 5m
9	Ultimate pit depth	27 m (BGL) - (1-5 Years) 47m (BGL) – (6-10 Years)
10	End use	Rough Stone will be loaded into tippers to needy buyers for producing aggregates, M-sand.

1.5 PROJECT REQUIREMENTS

The requirements of the project is given below.

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 8 KLD which will be procured from the outside agencies. Out of 8.0 KLD, drinking water requirement is 3.0 KLD, Green belt development is 3.0 KLD and dust suppression is 2.0 KLD.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid.
3	Manpower requirement	Permanent employees – 15, temporary employees – 15
4	Financial requirement	The total project cost as per AMP will be INR 1,32,33,000 including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 10.00 Lakhs is allocated. In addition, any demand raised by people during public hearing will also be met.

1.6 DESCRIPTION OF LEASE AREA

The features in the study area is given below.

Table 3.1 Description of the lease area

S.No.	Areas	Distance from project site
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 15km radius
2	Areas which are important or sensitive for ecological reasons	
A	Wetlands, water courses or other water bodies,	**Water bodies** / **Distance (Km)** / **Direction** Timiri Lake / 2.9 / NE Palayanur Big Lake / 6.2 / NE Kilpadi Lake / 7.42 / NE Punnapadi ake / 6.4 / E Shri Gokul krishna lake / 4.62 / SE Pachayamma n Temple Lake / 4.71 / S Ponniyamman Temple Lake / 3.16 / W
B	Coastal zone, biospheres,	Nil within 10km radius
C	Mountains, forests	Kannamangalam RF-7.8km (W) Punganur RF-8.5 KM (NW)
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 15km radius
4	Inland, coastal, marine or underground waters	Nil within 15km radius
5	State, National boundaries	Nil within 15km radius
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 15km radius
7	Defense installations	Nil within 15km radius
8	Densely populated or built-up area	Timiri – 2.5 km in S

9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Timiri – 2.5 km in S
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

The baseline data collection for meteorology, air, water, noise and soil environments have been carried out during Feb to April 2024.

Air, water, noise and soil samples are collected and analyzed through NABL accredited lab.

1.7 AIR ENVIRONMENT

The air monitoring have been carried out in 6 locations and the results are given below.

TABLE 3.3: DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS

S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ1	Within Mine Lease area	Core Zone	12°49'15.65"N & 79°16'20.66"E
2	AAQ2	Mohanavaram	0.54 km, S	12°48'56.00"N & 79°16'7.44"E
3	AAQ3	Varagur Patanam	2.79 km, SW	12°48'55.75"N & 79°14'45.06"E
4	AAQ4	Nambarai	2.00 km, N	12°49'4.08"N & 79°17'29.1"E
5	AAQ5	Kavanur	2.77 km, NW	12°50'21.37"N & 79°15'12.28"E
6	AAQ6	Vilapakkam	4.36 km N	12°51'14.39"N & 79°17'46.16"E

Station ID	Min	Max	Avg.
Particulate matter PM-$_{2.5}$ (µg/m^3)			
AAQ-1	22.1	31.1	53.20
AAQ-2	22.7	27.3	25.00
AAQ-3	19.9	30.8	25.35
AAQ-4	22.1	28.4	25.25
AAQ-5	20.1	23.9	22.00
AAQ-6	21.3	25.7	23.50
CPCB NAAQS 2009 for PM $_{2.5}$ - 60 µg/m^3			
Particulate matter PM-$_{10}$ (µg/m^3)			
AAQ-1	46.2	67.1	56.65
AAQ-2	48.1	61.8	54.95
AAQ-3	42.2	55.4	48.80
AAQ-4	46.8	60.9	53.85
AAQ-5	44.2	53.6	48.90
AAQ-6	45.4	57.2	51.30
CPCB NAAQS 2009 for PM $_{10}$ - 100 µg/m^3			
Sulphur Di-oxide as SO_2 (µg/m^3)			
AAQ-1	3.7	5.9	4.80
AAQ-2	3.4	5.7	4.55
AAQ-3	4.4	5.8	5.10
AAQ-4	3.5	5.6	4.55
AAQ-5	3.1	4.6	3.85
AAQ-6	3.4	5.6	4.50
CPCB NAAQS 2009 for SO_2 – 80 µg/m^3			
Oxide of Nitrogen as NO_2 (µg/m^3)			
AAQ-1	6.7	11.6	9.15
AAQ-2	6.7	8.4	7.55
AAQ-3	8.1	10.5	9.30
AAQ-4	6.2	11.8	9.00
AAQ-5	5.8	12.3	9.05
AAQ-6	6.1	13.1	9.60
CPCB NAAQS 2009 for NO_2 – 80 µg/m^3			

All the values of pollutant concentrations were found to be within the NAAQs Standards.

1.8 WATER ENVIRONMENT

Table 3.7 Results of Ground Water sampling Analysis in 6 locations							Specification / Limit (As per IS:10500: 2012)	
	W1	W2	W3	W4	W5	W6	Desirable	Permissible
Odour	AGREEABLE	AGREEABLE	Agreeable	AGREEABLE	AGREEABLE	AGREEABLE	Agreeable	Agreeable
Turbidity	<1	<1	<1.0	<1	<1	<1	Agreeable	Agreeable
pH at 25 °C	7.69	7.4	7.23	7.22	7.32	6.9	6.5 - 8.5	No Relaxation
Electrical Conductivity	726.5	803.6	1896	1655	2235	1892	1	5
Total Dissolved Solids	440	482	1140	995	1344	1136	500	2000
Total hardness as CaCO3	341	313	570	463	491	535	1	15
Calcium as Ca	87.1	85.5	96.6	105	101	124	200	600
Magnesium as Mg	29.5	23.8	78.9	48.5	57.0	54.2	200	600
Calcium as CaCO3	218	214	242	261	253	309	75	200
Magnesium as CaCO3	123	99.0	329	202	238	226		
Total alkalinity as CaCO3	267	323	412	457	505	376		
Chloride as Cl-	27.6	31.5	337	256	394	342	250	1000
Free Residual chlorine as Cl-	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	30	100
Sulphates as SO42-	82.3	90.8	292	204	372	280	45	No Relaxation
Iron as Fe	0.03	0.05	0.05	0.04	0.06	0.07	200	400
Nitrate as NO3	2.36	2.14	3.67	3.98	4.56	3.79	1	No Relaxation
Fluoride as F	0.15	0.19	0.41	0.24	0.12	0.17	0.1	0.3
Manganese as Mn	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	Not Specified	Not Specified

All the values were found to be within permissible limits

1.9 NOISE ENVIRONMENT

Noise levels were measured in 6 locations and the results are given below.

TABLE 3.3: DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS				
S. No.	**Station Code**	**Locations**	**Distance & Direction**	**Coordinates**
1	N1	Within Mine Lease area	Core Zone	12°49'15.65"N & 79°16'20.66"E
2	N2	Mohanavaram	0.54 km, S	12°48'56.00"N & 79°16'7.44"E
3	N3	Varagur Patanam	2.79 km, SW	12°48'55.75"N & 79°14'45.06"E
4	N4	Nambarai	2.00 km, N	12°49'4.08"N & 79°17'29.1"E
5	N5	Kavanur	2.77 km, NW	12°50'21.37"N & 79°15'12.28"E
6	N6	Vilapakkam	4.36 km N	12°51'14.39"N & 79°17'46.16"E

Table 3.8 Noise monitoring results					
S. No	**Location**	**Day equivalent**	**Night equivalent**	**Day equivalent limits by CPCB**	**Night equivalent limits by CPCB**
1	Within Mine Lease area	48.7	40.1	75	70
2	Mohanavaram	45.1	39.1		
3	Varagur Patanam	42.1	37.6		
4	Nambarai	43.9	38.9		
5	Kavanur	45.0	38.2		
6	Vilapakkam	48.2	39.7		

1.10 SOIL ENVIRONMENT

Soil samples are collected from 6 locations and the results are given below.

Table 3.9 Results of Soil Sample Analysis

S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
S. No	Parameter	Unit	Results	Results	Results	Results	Results	Results
1	pH at 25 °C	-	7.62	6.12	7.54	7.28	7.11	7.36
2	Electrical Conductivity	µmhos /cm	62.47	54.89	76.58	104.5	45.68	87.11
3	Dry matter content	%	95.14	96.68	97.04	93.91	95.91	93.55
4	Water Content	%	4.86	3.32	2.96	6.09	4.09	6.45
5	Organic Matter	%	0.87	1.02	0.56	0.73	0.81	1.40
6	Soil texture	-	SILT LOAM	SILT LOAM	LOAM	LOAM	SILT LOAM	LOAM
7	Grain Size Distribution i. Sand	%	30.56	27.02	44.36	40.58	23.86	45.7
8	ii. Silt	%	51.16	61.50	45.42	47.24	57.83	43.82
9	iii. Clay	%	18.28	11.49	10.22	12.18	18.32	10.48
10	Phosphorous as P	mg/kg	0.89	1.63	1.58	2.81	1.53	1.92
11	Sodium as Na	mg/kg	700	674	799	594	831	402
12	Potassium as K	mg/kg	765	733	897	683	959	539
13	Nitrogen and Nitregenous Compounds	mg/kg	221	329	165	193	249	442
14	Total Soluble Sulphate	%	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)	BDL(D.L .0.02)
15	Porosity	%	23.2	25.2	27.4	22.3	29.8	21.5
16	Water Holding Cabacity	Inches /foot	3.1	3.4	3.6	2.9	3.8	3.5

1.11 BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided in to 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Field survey is done. Erukku, Aavarai and Nayuruvi are found in lease area. In the buffer zone, common trees like Neem, papaya, mango, teak, etc and shrubs like Avarai, Aloe vera, etc, climbers like Kovai,jasmine etc are found.

FAUNA

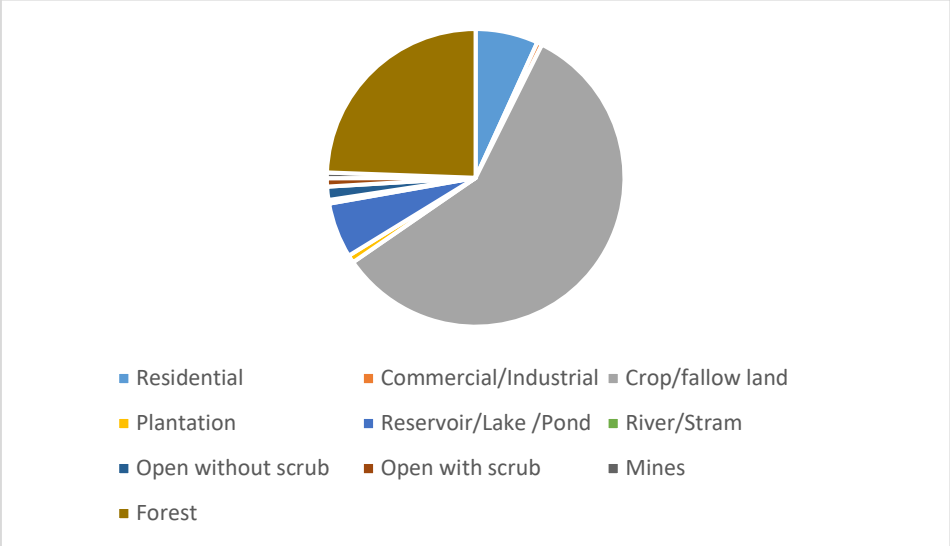
In the study area, commonly found animals like dogs, cats, bush rat, cows, birds like crow, Myna, Sparrow, etc were found.

1.12 LAND USE

The land use land cover data is found using the LANDSAT – 9 satellite imagery. The number of bands used are 11. The land use pattern is given below:

Table No. 3.17: Major Land Use Units of the Study Area in Percentage

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	23.69	7.36	Residential	21.90	6.80
				Commercial/Industrial	1.79	0.56
2	Agriculture	189.6	58.88	Crop/fallow land	186.9	58.04
				Plantation	2.70	0.84
3	Water bodies	20.53	6.38	Reservoir/Lake /Pond	19.28	5.99
				River/Stram	1.25	0.39
4	Waste Land	7.56	2.35	Open without scrub	4.65	1.44
				Open with scrub	2.91	0.90
5	Others	80.62	25.04	Mines	1.97	0.61
				Forest	78.65	24.43
Total		**322**	**100**	**Total**	**322**	**100**



1.13 SOCIO ECONOMIC ENVIRONMENT

The socio economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used.

The following data area collected from secondary data.

- Demographic pattern.
- Health pattern
- Occupational structure.
- Amenities available.

The Landuse expert visited more than 6 villages in the study area namely Timiri, Vilari, Mohanavaram, Nambarai and Varagur Patanam villages. Discussions were held with the people from nearby locality to study the social and economic conditions prevailing in the area. The expert also visited nearby hospitals, primary health centres and Timiri. The following observations were made.

Primary schools are available in many villages. For hospital facilities, people in the locality have to go to hospital in Timiri which is about 2.5Km – SE from the lease area.

- Major schools with higher secondary and senior secondary schools are located in Timiri.
- The major Timiri Union located in the area is Ranipet.
- Facilities like petrol pump stations, ATM facility are available in Timiri.

1.14 HYDROGEOLOGY OF THE LEASE AREA

Since there is Timiri Lake is located at a distance of 2.9 km in North Eastern side and Palayanur Big Lake is located at a distance of 6.2 km north eastern direction of the proposed site, the hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery. Timiri Lake is located at a distance of 2.9km in North Eastern side and Palayanur Big Lake is located at a distance of 6.2 km north eastern direction of the proposed ML area.

There are many tanks located in the study area, which are mostly dry throughout the year. These tanks get water only during monsoons. The factors may be monsoon failure, insufficient rainfall, poor rain water management and water consuming patterns.

1.15 GROUND WATER STUDY

For Ground water study, satellite imagery is used. Water levels from monitoring levels are collected through imaging. The pre-monsoon and post-monsoon data are collected and the results are analyzed.

During field visit, it is observed that water is available in wells only after monsoon. The yield is obtained at deep levels only.

As far as the mining lease area is considered, the area is rocky and no major seepage is envisaged. The production quantity is very less and the depth proposed is 47m bGL. Hence, there will not be any major impact due to mining on water levels or ground water levels in the area.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental impacts on the following environments are identified.

- Land environment
- Water environment
- Vegetation
- Fauna
- Air environment
- Noise environment
- Socio-economic impacts

1.16 LAND ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out upto 47m BGL. Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage, 4.04.50 Ha of lease area will be left as rain water harvesting pond. 1.49.50 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca are selected. A total of 1700 trees are planned to be planted. Spacing will be 3m x 3m.

1.17 WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 8.0 KLD which will be sourced from outside agencies. Negligible sewage will be generated, for which a septic tank with soak pit will be set up.

During monsoon season, the excess rain water, if any, will be led through garland drain of 0.6m width and 0.3 m depth to the collection pond with silt traps.

Since the mining operation will be limited upto depth of 27 m (BGL) - (1-5 Years) and 47m (BGL) – (6-10 Years), there will not be any seepage. However, the rain water percolation and collection of water from seepage shall be less than 300lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal

pump motivated with 7.5H.P.Motor. The quality of water is expected to be potable. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water can also be used for plantation purposes

The major water bodies found in the buffer zone are.

- Timiri Lake -2.9km (NE)
- Palayanur Big Lake 6.2km (NE)
- Kilpadi Lake 7.42km (NE
- Punnapadi Lake 6.4km (E)
- Shri Gokul krishna lake4.62 km (SE)
- Pachayamman Temple Lake4.71km (S)
- Ponniyamman Temple Lake3.16km (W)

Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made in to these water bodies, there is no major impact. For the canal, adequate safety distance is left. The proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the lease.

It is planned to carryout appropriate rainwater harvesting schemes and artificial recharge schemes in the area.

- Rain water falling in the quarry will be collected efficiently through garland drains.
- Water thus collected will be passed through collection tank with silt traps. This water can be used by the proponent for water sprinkling and for green belt purposes.
- Excess water after desiltation will be provided to downstream users, if any

1.18 BIOLOGICAL ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Fauna is affected due to noise and vibration.
- Dust generation due to mining activities
- Change in land use of the lease area
- Accidental falling of animals

Mitigation measures

- Sirens will be blown before blasting in the mines. To reduce noise levels, plantation will be done. Blasting will be carried out only in the allotted time.
- To reduce dust generation, mist sprayers will be used. During transportation, the material will be covered with tarpaulin. Water sprinkling will be done to reduce generation of pollutants
- After the mine closure stage, the mine pit will be left as rain water collecting tank, which can attract bird population in the nearby areas.
- To prevent entry of animals, the mining area will be properly fenced.

1.19 AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM_{10}, $PM_{2.5}$. Other than these pollutants, gaseous emissions of sulfur dioxide (SO_2) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

The major impacts are Dust emission due to drilling, blasting and transportation. The major mitigation measures include Using Wet drilling methods, Allowing drilling only with PPE, Carrying out blasting only during specified times, Avoiding blasting during unfavourable weather conditions, Using explosives of good quality, Using mist sprayers Regular wetting of transport, Covering the materials carried in tippers with tarpaulin, Proper maintenance of vehicles used for transportation, Conducting regular emission tests for vehicles used for transport Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area.

The anticipated data is calculated using AERMOD software and the projected values are found to be within limits.

1.20 NOISE ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area.
- As per DGMS (Directorate General of Mines Safety) and OSHA (Occupational Safety and Health Administration) limits, the acceptable noise level is 90 dB(A) for an exposure period of 8 hours.
- Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife.
- Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus, which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing

Mitigation measures

- As the distance between the source and receptor increases, the noise level also decreases. Hence, there will be a natural attenuation
- The proposed has planned to develop green belt in the periphery of the lease area, which diminishes sound volume by dampening them.
- All the equipment/machinery/trucks involved will be properly maintained to control noise generation
- Conducting regular health checkups for employees involved
- Employees will be made to work on shifts to reduce their exposure time
- Providing earplugs to all employees

By adopting these measures, the noise levels will be maintained well within MoEF & CC limits since the baseline value is low.

1.21 VIBRATION: IMPACT AND MITIGATION MEASURES

Impacts

- Though vibration will be only felt by the people working inside the lease area, it is usually undesired.
- Vibration may also cause flyrocks
- It may frighten the birds and small insects in the lease area. However, it will be felt only for a short period

Mitigation measures

- Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM
- Control of fly rock and vibration by maintaining peak particle velocity with in standard as prescribed by the DGMS and MOEF & CC.
- Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive
- Supervising blasting by competent and statutory foreman/ mines manager

1.22 SOCIO ECONOMIC ENVIRONMENT

Impact and Mitigation measures

No land is acquired from anyone. No rehabilitation is needed. Hence, there is no negative impact. The proponent has planned to spend INR 10,00,000 for CER activities. This amount will be subjected to change after public hearing.

1.23 OCCUPATIONAL HEALTH

Impacts

Dust generation due to drilling and blasting, Noise generation due to drilling and blasting, unexpected accidents. Continuous exposure to dust causes Pneumonia, Tuberculosis, Rhematic arthritis and Segmental Vibration, Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness, Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

- Using dust suppression measures like water spraying on roads to reduce rise of air pollutants
- Providing green belt for air pollutant and noise attenuation
- Ensuring slope stability
- Employing only trained professionals for blasting
- Conducting Pre-Medical Examination for employees before inducting
- Conducting periodical Medical Examination once in 6 months.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

1.24 ENVIRONMENTAL MONITORING PROGRAMME

Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation. A schedule is framed with timeline to monitor various parameters during the operation of the project. To evaluate the effectiveness of environmental management programme, regular monitoring of the important environmental parameters will be taken up. Air monitoring will be carried out once in 3 months, water sample will be collected once in a season, noise will be monitored once in 3 months, soil samples will be analyzed once per season. For EMP, a budget of INR 501.15 lakhs is allocated.

1.25 PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty, GST, etc
- The project will also contribute via CSR.
- The demands of people during public hearing will also be considered by the project proponent

Social benefits

- This project provides employment to 30 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.
- For CSR, INR 10,00,000 is allocated.
- Based on the demand of the people during public hearing, further funds will be allocated, if necessary.
- Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and 501.15 lakhs for the five years has been allocated as EMP cost. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

ANNEXURE-1

ANNEXURE I

O/o. ASSISTANT DIRECTOR (I/c) RANIPETTAI GEOLOGY & MINING

Rc.No.149/2023(Mines) **Date : 29.09.2023**

O/o. The Assistant Director
Department of Geology and Mining
Collectorate,
Ranipet District.

PRECISE AREA COMMUNICATION LETTER

Sub: Mines and Minerals – Minor Mineral – Ranipet District – Arcot Taluk– Nambarai Village – SF.Nos. 361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C and 367/4 – Extent of 4.04.50 of patta lands – Quarry lease application preferred by M/s.Dhana Blue Metals (Proprietor Thiru.S.Dhanakotti) for Quarrying Roughstone and Gravel - Recommendations received – Precise Area Communicated – Reg.

Ref:
1) Quarry lease application preferred by M/s.Dhana Blue Metals, dated: 23.06.2023.
2) The Revenue Divisional Officer, Ranipet report Rc.No.A5/2207/2023, Dated: 25.09.2023.
3) Inspection report of the Assistant Director of Geology and Mining, Vellore dated 27.09.2023.
4) G.O.(MS)No.169 Industries(MMC.1) Department, dated 04.08.2020.

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One M/s.Dhana Blue Metals, (Proprietor Thiru.S.Dhanakotti), No.6, GST Road, Pallavaram Taluk, Chengalpattu District applied for grant of lease for quarrying Roughstone and Gravel over an extent of 4.04.50 hectares of patta lands in SF.Nos.361/1A (0.18.50), 361/2A2 (0.04.00), 361/2B1 (0.17.00), 366/1 (0.13.50), 366/2 (0.48.50), 366/3 (0.19.50), 366/4 (0.22.00), 366/5 (0.24.50), 367/1 (0.43.50), 367/2 (0.11.00), 367/3A (0.32.50), 367/3B (0.15.00), 367/3C (0.13.50) and 367/4 (1.21.50) of Nambarai Village, Arcot Taluk, Ranipet District for a period of 10 years under Rule 19 & 20 of Tamil Nadu Minor Mineral Concession Rules, 1959.

2) The Revenue Divisional Officer, Ranipet has recommended for grant of quarry lease in the subject area and the Assistant Director, Geology and Mining, Ranipet has also recommended for grant of quarry lease for quarrying rough stone and gravel over an extent of 4.04.50 hectares of patta lands in SF.Nos.361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C and 367/4 of Nambarai Village, Arcot Taluk, Ranipet District subject to certain conditions.

In view of the above, based on the recommendations of the Revenue Divisional Officer, Ranipet and Geological field observations an extent of 4.04.50 hectares of patta land in SF.Nos.361/1A (0.18.50), 361/2A2 (0.04.00), 361/2B1 (0.17.00), 366/1 (0.13.50), 366/2 (0.48.50), 366/3 (0.19.50), 366/4 (0.22.00), 366/5 (0.24.50), 367/1 (0.43.50), 367/2 (0.11.00), 367/3A (0.32.50), 367/3B (0.15.00), 367/3C (0.13.50) and 367/4 (1.21.50) of Nambarai Village, Arcot Taluk, Ranipet District is hereby fixed as precise area and communicated to the applicant as per the powers conferred under Rule 41(4) of Tamil Nadu Minor Mineral Concession Rule as amended vide G.O.(MS)No.169 Industries (MMC.1) Department, dated 04.08.2020 for grant of lease for quarrying Roughstone and Gravel in favour of M/s.Dhana Blue Metals, (Proprietor of Thiru.S.Dhanakotti) for a period of 10 years under Rule 19 & 20 of Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the following conditions.

Conditions

1. 7.5 meters safety distance should be left out for the adjacent patta lands.

2. 10 meters safety distance should be left out for the adjacent Government Poramboke lands.

3. 50 meters safety distance should be left out to the seasonal odai passing on Western side of the proposed area.

4. The applicant shall not make any hindrance to the adjacent lands and public.

5. Quarrying should be restricted in the lease granted area only and barbed wire fencing should be erected all along the boundary of the lease granted area before commencement of quarrying operation.

6. Blasting of rock should be done by the short fire method with less explosives in between 12.00 Noon to 2.00 P.M., after giving Proper signal by siren as per the provisions of Indian Explosives Act, 1884.

7. Quarrying should be carried out in scientific and systematic manner.

The applicant firm M/s.Dhana Blue Metals, (Proprietor: Thiru.S.Dhanakotti) is directed to submit the Mining plan within 90 days to the Assistant Director of Geology and Mining(i/c), Ranipet for approval and also to submit Environmental Clearance issued by State Environmental Impact Assessment Authority (SEIAA) as required under Rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for the above area for further process.

29/09/23

Assistant Director(i/c),
Geology and mining,
Ranipet.

To

M/s.Dhana Blue Metals,
(Proprietor Thiru.S.Dhanakotti)
No.6, GST Road,
Pallavaram Taluk,
Chengalpattu District.

Copy to

1. The Chairman,
   SEIAA,3rd Floor, Panagal Maaligai,
   No.1, Jeenis Road, Saidapet,
   Chennai-15.
2. The Director of
   Geology and Mining,
   Guindy, Chennai-32.

ANNEXURE-2

From
Thiru D.Bernard. M.Sc.,
Assistant Director(i/c),
Dept.of Geology and Mining,
Ranipet District.

To
M/s.Dhana Blue Metals,
(Proprietor Thiru.S.Dhanakotti)
No.6, GST Road,
Pallavaram Taluk,
Chengalpattu District.

Rc.No. 149/2023(Mines) Dated: 05 .10.2023

Sir,

Sub: Mines and Minerals – Minor Minerals – Roughstone and Gravel – Ranipet District - Arcot Taluk – Nambarai Village - SF.Nos. 361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C and 367/4 – OAE of 4.04.50 Hect. – Quarry lease application preferred by M/s.Dhana Blue Metals (Proprietor Thiru.S.Dhanakotti) - Precise area communicated - Draft Mining plan submitted - Approved – Regarding.

Ref:
1. Application of M/s.Dhana Blue Metals (Proprietor Thiru.S.Dhanakotti) dated: 23.06.2023.
2. This office Precise area communication letter Rc.No. 149/2023 (Mines) dated 29.09.2023.
3. The applicant letter dated 03.10.2023.

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In the reference first cited, M/s.Dhana Blue Metals, (Proprietor Thiru.S.Dhanakotti), No.6, GST Road, Pallavaram Taluk, Chengalpattu District has applied for grant of quarry lease for quarrying 'Rough stone & Gravel' over an extent 4.04.50 Hects of patta land in SF.Nos.361/1A (0.18.50), 361/2A2 (0.04.00), 361/2B1 (0.17.00), 366/1 (0.13.50), 366/2 (0.48.50), 366/3 (0.19.50), 366/4 (0.22.00), 366/5 (0.24.50), 367/1 (0.43.50), 367/2 (0.11.00), 367/3A (0.32.50), 367/3B (0.15.00), 367/3C (0.13.50) and 367/4 (1.21.50) of Nambarai Village, Arcot Taluk, Ranipet District under the provisions of Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2) In the reference letter second cited, the Assistant Director(i/c), Ranipet has communicated "Precise Area" for the proposal based on the recommendations of the Revenue Divisional Officer, Ranipet field observation under Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 with the direction to the applicant to submit approved Mining plan and Environmental Clearance.

3) In the reference third cited, the applicant has submitted three copies of draft Mining plan prepared by the qualified person for approval. The draft Mining plan has been examined and verified with reference to the provisions laid down in Rule 36 and 41 of Tamil Nadu Minor Mineral concession Rules and the guidelines issued by the Commission of Geology and Mining vide letter Rc.No. 3868/LC/2012 dated. 19.11.2012 & 07.11.2014.

4) **The scrutiny remarks on the draft Mining Plan are furnished below.**

a. The Rough Stone & Gravel quarry has been planned to be operated for a period of ten years and the mining plan has been prepared for first five years.

b. The Geological resources in the subject area is assessed as 18,04,050 cubic meter of Rough Stone and 80,180 cubic meter of Gravel formation up to a depth of 47 m below ground level.

c. The Mineable reserve is computed as 5,08,825 cubic meter of Rough Stone and 50,304 cubic meter of Gravel upto a depth of 47 m below ground level.

d. It has been proposed to produce 3,71,250 cubic meter of Roughstone and 50,304 cubic meter of Gravel up to a depth of 27 m below ground level in the first five years of lease period.

e. Safety distance of 50 mts to the odai situated on westernside adjoining to lease applied area, 10 mts to adjoining Government lands and 7.5 mts to adjoining patta lands are earmarked.

f. Machineries like tractor mounted compressor attached with jack hammers, excavators are proposed for quarrying operation.

g. Water table level in the area applied is in between 60m and 57m during a year.

h. As per the Rule 111 of Metelliferous Mining Regulations 1961, the boundary barrier Zone of 7.5 meters is ear-marked as neutral zone.

i. The plates including Satellite image (1:10,000), Toposketch of quarry lease applied area for 10Km Radius (1:1,00,000), Quarry lease & Surface plan (1:1,000), Conceptual plan and sections (1:1000) & Sections Hor–(1:1000) Ver–(1:500) Topography, Geological & year wise development & production plan & sections (1: 1000) & Sections Hor–(1:1000) Ver–(1:500) and Environmental plan (1:10,000) were verified with reference to the field evidences.

j. The stipulations made in rule 36 of the Tamil Nadu Minor Mineral Concession Rules, 1959 are adhered in the draft Mining plan.

k. The draft Mining plan is submitted within the prescribed time limit of 90 days from the date of receipt of the precise area communication letter.

In view of the above, as per the powers laid down in rule 41 of the Tamil Nadu Minor Mineral Concession Rules, 1959, the draft mining plan submitted by the applicant M/s.Dhana Blue Metals, (Proprietor Thiru.S.Dhanakotti), No.6, GST Road, Pallavaram Taluk, Chengalpattu District in respect of proposed Rough stone & Gravel quarry (Minor Mineral) over an extent 4.04.50 Hects patta land in SF.Nos.361/1A (0.18.50), 361/2A2 (0.04.00), 361/2B1 (0.17.00), 366/1 (0.13.50), 366/2 (0.48.50), 366/3 (0.19.50), 366/4 (0.22.00), 366/5 (0.24.50), 367/1 (0.43.50), 367/2 (0.11.00), 367/3A (0.32.50), 367/3B (0.15.00), 367/3C (0.13.50) and 367/4 (1.21.50) of Nambarai Village, Arcot Taluk, Ranipet District is hereby approved subject to the following conditions and stipulations made in the governing Act and Rules.

i) The Mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time.

ii) The approval of the Mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959.

iii) The Mining plan is approved without prejudice to any of the orders or directions from any legal forums.

iv) Quarrying shall be carried out scrupulously as per the Approved Mining plan.

Encl: 2 copies of Approved Mining Plan

05/10/23

Assistant Director(i/c),
Geology and Mining,
Ranipet.

Copy submitted to:

The Chairman,
State Level Environment Impact
Assessment Authority,
3rd Floor, Panagal Maaligai,
No.1 Jeenis Road, Saidapet,
Chennai-15.

5/10/23

ANNEXURE-3

From
Thiru.D.Bernard. M.Sc.,
Assistant Director(i/c),
Geology and Mining,
Ranipet District.

To
M/s.Dhana Blue Metals,
(Proprietor Thiru.S.Dhanakotti)
No.6, GST Road,
Pallavaram Taluk,
Chengalpattu District.

Rc.No.149/2023(Mines) Date: 06.10.2023

Sir,

Sub: Mines and Minerals – Minor Minerals – Rough stone and Gravel – Ranipet District – Arcot Taluk - Nambarai Village - SF.Nos. 361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C and 367/4 totally over an extent of 4.04.50 hectares of patta land – Quarry lease application preferred by M/s.Dhana Blue Metals (Proprietor Thiru.S.Dhanakotti) - Precise area communicated - Draft Mining plan submitted - Approved – Certificate requested - Regarding.

Ref:
1. Quarry lease application preferred by M/s.Dhana Blue Metals (Proprietor Thiru.S.Dhanakotti) dated: 23.06.2023.
2. Mining Plan approval letter Rc.No.149/2023 (Mines), Dated: 05.10.2023.
3. Letter from M/s.Dhana Blue Metals (Proprietor Thiru. S.Dhanakotti) dt: 05.10.2023.

In the reference first cited, M/s.Dhana Blue Metals, (Proprietor Thiru.S.Dhanakotti), No.6, GST Road, Pallavaram Taluk, Chengalpattu District has applied for grant of quarry lease for quarrying 'Rough stone & Gravel' over an extent 4.04.50 Hects of patta land in SF.Nos.361/1A (0.18.50), 361/2A2 (0.04.00), 361/2B1 (0.17.00), 366/1 (0.13.50), 366/2 (0.48.50), 366/3 (0.19.50), 366/4 (0.22.00), 366/5 (0.24.50), 367/1 (0.43.50), 367/2 (0.11.00), 367/3A (0.32.50), 367/3B (0.15.00), 367/3C (0.13.50) and 367/4 (1.21.50) of Nambarai Village, Arcot Taluk, Ranipet District for a period of 10 years under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

In this reference 2nd cited M/s.Dhana Blue Metals, (Proprietor Thiru.S.Dhanakotti) applicant of the proposed stone quarry has request to furnish the details of existing, abandoned and proposed quarries situated with 500mts radius from the subject quarry and permitted quantity in the proposal area.

The details of existing, abandoned and proposed quarries situated within 500mts from the proposed area are furnished below.

1) Existing Quarries :-

Sl. No	Name of the Lessee / Permit Holder	Taluk & Village	S.F. No.	Extent	Lease Period
1.	Thiru.A.V.Sarathy (Partner) "S" Traders	Arcot / Anaimallur	374/5 (Part-11)	0.80.00	25.01.2018 to 24.01.2028
2.	Thiru.A.V.Sarathy (Partner) "S" Traders,	Arcot / Anaimallur	374/5 (Part-10)	0.80.00	18.07.2018 to 17.07.2028
3.	Tmt.Subanithyadeepa,	Arcot / Anaimallur	374/5 (Part-9)	2.00.00	26.03.2018 to 25.03.2028
4.	Tmt.S.Arut Selvi	Arcot/ Anaimallur	374/5 (Part-12)	4.50.00	18.11.2021 to 17.11.2031
5.	M/s.Argunt Aggregate Pvt. Ltd., (K.Chandrasekaran)	Arcot/ Anaimallur	374/5 (Part-14)	2.00.0	10.06.2021 to 09.06.2031
6.	Aggeregate Engineering Thiru.P.Radhakrishnan	Arcot/ Anaimallur	374/5 (Part-13)	0.61.00	23.01.2022 to 22.01.2032

2) Expired Quarries :-

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No.	Extent	Lease Period
NIL					

3) Abandoned Quarries :

Sl. No.	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No.	Extent	Lease Period
1.	R.Adikesavelu	Arcot/ Anaimallur	433 (Part-2)	1.00.00	10.08.2009 to 09.08.2019
2.	G.S.Venkatesh	Arcot/ Anaimallur	374/5 (Part-7)	1.00.00	20.09.2010 to 19.09.2020
3.	M.A.Sangeethkumar	Arcot/ Nambarai	433 (Part-1)	0.80.00	04.8.2009 to 03.8.2019

4.	M.Sathishkumar	Arcot/ Anaimallur	374/5 (Part-2)	0.80.00	04.11.2008 to 03.11.2018

4) Present Proposed Quarries :

Sl. No	Name of the Lessee / Permit Holder	Village & Taluk	S.F. No.	Extent	Lease Period
1.	M/s.Dhana Blue Metal, Prop: Thiru.S.Dhanakotti	Arcot / Nambarai	361/1A, 361/2A2, 361/2B1, 366/1, 366/2, 366/3, 366/4, 366/5, 367/1, 367/2, 367/3A, 367/3B, 367/3C & 367/4	4.04.50	--

06/10/23

Assistant Director(i/c),
Geology and Mining,
Ranipet District.

6/10/23